

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

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| TRUEPOSITION, INC., |) | |
| |) | |
| Plaintiff and Counterclaim |) | |
| Defendant, |) | |
| |) | |
| v. |) | CA No. 05-00747-SLR |
| |) | |
| ANDREW CORPORATION, |) | |
| |) | |
| Defendant and Counterclaim |) | |
| Plaintiff. |) | |

**ANDREW CORPORATION'S OPENING BRIEF IN SUPPORT
OF ITS CONSTRUCTION OF CERTAIN CLAIM LIMITATIONS
OF U.S. PATENT NO. 5,327,144**

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I. INTRODUCTION

This brief sets forth Andrew's proposed constructions of certain claim limitations of the patent-in-suit, U.S. Patent No. 5,327,144. Andrew bases its proposed constructions on the claim language, the '144 patent specification, and the prosecution history. Andrew also has cited deposition testimony from this case and additional sources to assist the Court in understanding the background of the technology and the terminology used. Andrew also addresses the constructions proposed by TruePosition, some of which conflict with positions previously taken on the '144 patent by expert witnesses advocating on behalf of TruePosition. For the reasons explained below, Andrew respectfully requests that this Court adopt Andrew's proposed claim constructions.

II. BACKGROUND AND TECHNOLOGY AT ISSUE

The '144 patent is titled "Cellular telephone location system." '144 Patent (A1). The application leading to the '144 patent was filed on May 7, 1993. The '144 patent issued on July 5, 1994. The '144 patent generally relates to locating a mobile phone in a cellular telephone network. The "invention" of the '144 patent relates to:

- A. the ability to automatically track cellular telephones. *See* '144 Patent col.1 ll.13-14 (A17) ("Prior to the invention disclosed herein, there has been no known system for automatically tracking mobile cellular telephones"); and
- B. the fact that the tracking is achieved through monitoring the phones' transmissions over a specific channel called a "reverse control channel." *See, e.g.,* '144 Patent Claim 1 (A26).

The patent describes a "a cellular telephone location system for automatically recording the location of one or more mobile cellular telephones." '144 Patent Abstract (A1). The specific location technology at issue in this case is called "time difference of arrival," or TDOA. TDOA is relatively precise and allows a mobile phone to be located without the user's knowledge.

A. TDOA

“TDOA,” or time difference of arrival, is a mathematical calculation that can be used to pinpoint the location of a mobile phone. Basically, locating a mobile phone using TDOA technology involves: (1) determining the distances between the mobile phone and various base stations using the time difference of arrival of the phone’s signal to the base stations; and (2) plugging those distances into known equations to calculate the location of the mobile phone. The ‘144 patent discloses “correlation function” and “least squares estimate” algorithms to perform the “means for processing . . .” and “means for determining . . .” limitations used to compute the mobile phone’s locations.

B. CHANNELS AND DIRECTION

As discussed in detail below, the term “reverse control channel” is a term of art denoting a particular channel in a particular cellular system. However, an understanding of the general concept of direction is helpful background for understanding the technology at issue. “Uplink” — or “reverse” — signals are signals transmitted **from** a mobile phone **to** a base station.¹ Downlink — or “forward” — signals are signals transmitted from a base station to a mobile phone.²

There are also two different types of channels that can carry information in the reverse/uplink direction:

1. reverse control channels that carry only signaling information, which is information used to establish, maintain and control a connection to the network;³ and

¹ A base station is a transmitter/receiver that relays cellular calls from one area to another.

² In other words:
Reverse = Uplink = Transmission Going From A Mobile Phone To A Base Station
Forward = Downlink = Transmission Going From A Base Station To A Mobile Phone

³ See Agee Dep. 75:7-14, Jan. 24, 2007 (A41); Anderson Dep. 51:12-17, Oct. 24, 2006 (A209).

2. reverse traffic (or “voice”) channels that carry **both** traffic information such as voice, text messages and other user data, **and** signaling information.

Some channels are “one-way”, while others are “two-way.” See Nilesh Agarwal, Leena Chandran-Wadia, and Varsha Apte, *Capacity Analysis of the GSM Short Message Service* at 2 (A169); *W-CDMA Mobile Communications System* (Keiji Tachikawa ed., John C. Wiley & Sons, 2002) at 93, 127-128 A177, 178-179); Asha Mehrotra, *GSM System Engineering* (1997) at 73-75, 77, 101 (A184-186, 187, 188); Gunnar Heine, *GSM Networks: Protocols, Terminology, and Implementation* (1999) at 336 (A192); Raymond Steele, Chin-Chun Lee, Peter Gould, *GSM, cdmaOne and 3G Systems* (2001) at 106 (A196); Jörg Eberspächer, Hans-Jörg Vögel, Christian Bettstetter, *GSM Switching, Services and Protocols* (2nd ed. 2001) at 59-60 (A201-202); *ETSI TS 144 018 V6.19.0 (2006-09) Technical Specification: Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol (3GPP TS 44.018 version 6.19.0 Release 6)* (European Telecommunications Standards Institute 2006) at 18 (A206); see also Goodman Dec. ¶ 11(h), Feb. 2, 2007 (A279).⁴

Each asserted claim of the ‘144 patent requires the use of “reverse control channels.” See ‘144 Patent Claims 1, 2, 22, 31, 32. The specification distinguishes voice/traffic channels from the “reverse control channels” required by each amended claim. See, e.g., ‘144 Patent col.4 ll.24-27, 36-38 (A18) (“There are numerous advantages provided by monitoring control channels to track the locations of cellular telephones. First, a voice channel is an expensive and relatively scarce resource.... Second, each voice channel transmission adds a call record in an associated billing system....”); see also ‘144 Patent col.4 l.68 – col.5 l.4 (A18-19) (“Both the concept of monitoring periodic control channel

⁴ The relevant excerpt from each book cited here is included in the Joint Appendix; Andrew will make the entirety of each book available at the Court’s request.

transmissions, *as opposed to voice channel transmissions*, and the particular way in which this function is carried out represent significant technological advancements.”) (emphasis added). Through statements it made to the U.S.P.T.O. during prosecution, TruePosition repeatedly disclaimed reverse traffic (or voice) channels from the scope of the ‘144 patent claims. *See, e.g.*, Information Disclosure Statement Supporting Petition To Make Special (distinguishing numerous references for failing to disclose monitoring reverse control channels).

The term “reverse control channel” has a specific meaning in the art. *See* TIA/EIA 553 (hereinafter “ANSI 553”)⁵ at 2-27 – 2-32 (A236-241) (differentiating between a Reverse Control Channel and a Reverse Voice Channel). *See also* D. Goodman Dep. 21:15-23, Jan. 15, 2007 (A67) (“So what I’ll tell you is the ‘reverse control channel’ is a logical channel that carries information from a mobile terminal to a base station in the format specified in various standards documents, and one of them, for example, is, as I recall it, ANSI, American National Standard 553. It says exactly what the information format of the ‘reverse control channel’ is.”)

Importantly, a person of skill in the art understands that a “reverse control channel” carries *only* signaling information. TruePosition’s Chief Technical Officer Rob Anderson testified accordingly:

Q: Do control channels communicate anything other than signaling information?

A: No.

Anderson Dep. 42:5-7, Sep. 21, 2006 (A80).

⁵ EIA/TIA-553 is also called “ANSI 553.” Its full name is ANSI/EIA/TIA-553-1989 Mobile Station Land Station Compatibility Specification. It describes the technical requirements for the cellular mobile telecommunication system described in the ‘144 patent specification. It describes the format of a “reverse control channel” transmission. *See* ANSI 553, Section 2.7.1 (Signaling Format, Reverse Control Channel) at 2-27 (A236).

In contrast, a reverse voice channel carries *both* traffic/voice information *and* signaling information. TruePosition's expert witness in a prior litigation with Andrew's predecessor confirmed this definition of a voice/traffic channel in the context of the '144 patent:

a person of ordinary skill in the art would have been aware that a wireless cellular communication system had two types of channels — a control channel and a voice channel....The voice channel [] contains both user information (voice and other user data) and certain system control information.

TruePosition's July 28, 2003 Report of Stuart Schwartz (hereinafter "Schwartz Report") at 20-21, ¶ 57 (A113-114); *see also id.* at 22, ¶ 61 (A115) ("Although called the 'voice channel', a person of ordinary skill in the art in 1995-1996 would have been aware that the voice channel has both voice data and control type information....").

A "reverse control channel" does not carry information from one user to another, as TruePosition's expert witness Dr. Brian Agee testified in this case: "defining 'user' as a person or entity that's using the network, then, no it [a reverse control channel] does not transmit data that's used – that can be used by one – that's intended to be used by the users of the system." Agee Dep. 79:19-23, Jan. 24, 2007 (A45).

C. SPECIFIC TYPE OF CELLULAR NETWORK

The specification teaches that the '144 patent is directed to a specific analog cellular network configuration. The specification describes that analog network system at length. *See, e.g.*, '144 Patent col.1 l.32-col.3 l.40 (A17-18). Relevant passages include:

- "A separate set of channels is assigned to each cell in a cluster. However, the sets used in one cluster are reassigned in the other cluster, thus reusing the available spectrum." '144 Patent col.1 ll.56-60 (A17).
- "The Federal Communications Commission (FCC) has allocated a 25 MHz spectrum for use by cellular systems. This spectrum is divided into two 12.5 MHz bands, one of which is available to wire line common carriers only and the other of which is available to non-wire line common carriers only. In any given system, the non-wire line service provider operates within the "A side"

of the spectrum and the wire line provider operates within the “B side” of the spectrum[.] Cellular channels are 30 KHz wide and include control channels and voice channels. In particular, the twenty-one control channels for ‘A’ systems are numbered 313 through 333 and occupy a 30 KHz band of frequencies 834.390 MHz to 834.990 MHz. The control channels for ‘B’ systems are numbered 334 through 354 and occupy 835.020 MHz to 835.620 MHz.” ‘144 Patent col.1. 1.66 – col. 2 1.13 (A17).

- “Each cell site (or, where a cell site is “sectored” as described below, each sector of that cell site) uses only a single control channel.” ‘144 Patent col. 2 ll.13-15 (A17).
- “The control channel from a cell site to a mobile unit is called the ‘forward’ control channel and the control channel from the cellular telephone to the cell site is called the “reverse” control channel.” ‘144 Patent col.2 ll.15-19 (A17).
- “When a cellular telephone is first turned on, it scans all forward control channels, listening for the channel with the strongest signal. The telephone then selects the forward control channel with the strongest signal and listens for system overhead messages that are broadcast periodically, for example, every 0.8 seconds.” ‘144 Patent col.2 ll.44-49 (A17).
- “When the reverse control channel becomes free, as indicated by the busy/idle bit, the cellular telephone attempts to register itself by seizing the reverse control channel.” ‘144 Patent col.2 ll.59-62 (A17).
- “When turned on but not in active use, a mobile cellular telephone periodically scans the control channels assigned to the system and marks for use the strongest carrier found.” ‘144 Patent col.3 ll.17-27 (A18).

The ‘144 patent also discusses “analog control channels” at lines 27-31 of column 1.

The named inventors deposed in this case were not sure what the specification meant by “analog control channels,” but they testified they were referring to a certain analog (“AMPS”) system when they wrote the passage. *See* Knight Dep. 89:25-90:13, Oct. 6, 2006 (A71); Webber Dep. 23:9-18, Oct. 4, 2006 (A244).

D. AUTOMATICALLY DETERMINING

In addition, during prosecution of the ‘144 patent, the applicants emphasized to the PTO that the alleged invention claimed in the ‘144 patent determines the location of mobile cellular telephones by monitoring periodic reverse control transmissions initiated by the mobile cellular phones. *See, e.g.*, May 7, 1993 Information Disclosure Statement Supporting

Petition to Make Special (A219-229). The applicants distinguished numerous prior art references by arguing the references fail to disclose or teach “an apparatus or method for determining the location of a mobile cellular telephone by monitoring control channel transmissions.” *Id.* at 7 (A225); *see also id.* at pp. 1-2, 3, 6, 7, 8 (A219-220, 221, 224, 225, 226).

The applicants also emphasized during prosecution that their alleged invention locates cellular phones by monitoring the control channel transmissions the cellular phone already periodically transmits during operation:

As discussed in applicants’ specification, there are numerous advantages provided by monitoring control channels to track the locations of cellular telephones....[C]ontrol channel transmissions already occur periodically in cellular systems....[S]ince the frequency of control channel transmissions is software controllable, a location system in accordance with the present invention could control the frequency of control channel transmissions and offer different subscribers different location information update rates.

Id. at 9-10 (A227-228) (emphasis added).

Thus, the applicants repeatedly represented to the PTO that the alleged invention claimed in the ‘144 patent is patentable because it locates mobile cellular phones by monitoring the cellular phones’ periodic control channel transmissions.

Notably, this position was also adopted by TruePosition in its previous litigation against Andrew’s predecessor:

- “The control channel system described by the ‘144 patent is an all inclusive system, monitoring all calls....” Schwartz Report at 29, ¶ 73 (A122).
- “The ‘144 patent teaches an inclusive control channel location system for locating all MS’s with timing information. The ‘144 patent’s control channel system monitors all of the control channels and locates a MS when the control channel is detected, and stores the locations in a database. Schwartz Report at 30, ¶ 76 (A123) (citing ‘144 Patent col.5 ll.31-33).
- “In order to accomplish this on the control channel, the ‘144 patent teaches that all of the reverse control channels within a given area have to be

monitored so that the MS location can be determined periodically and the data base can be updated.” Schwartz Report at 30-31, ¶ 76 (A123-124) (citing ‘144 Patent col.4 l.12-16; col.4 ll.59-62; col.8 ll.26-30).

- “While accurate, the ‘144 patent required monitoring all of the reverse control channels within a given area.” Schwartz Report at 31, ¶ 77 (A124).

III. SUMMARY OF CLAIM LIMITATIONS ADDRESSED HEREIN

The following limitations are addressed herein:

- A. Reverse control channel(s)
- B. Reverse
- C. Control Channel(s)
- D. Prescribed Set
- E. Time stamp bits representing the time at which said cellular telephone signals were received
- F. Time stamp bits representing the time at which said frames were produced at each cell site
- G. Subscribers
- H. Table identifying individual cellular telephone signals
- I. Data identifying the cellular telephones
- J. Processing said frames of data to identify individual cellular telephone signals
- K. Means for determining, on the basis of said times of arrival differences, the locations of the cellular telephones responsible for said cellular telephone signals
- L. Means for processing said frames of data from said cell site systems to generate a table identifying individual cellular telephone signals and the differences in times of arrival of said cellular telephone signals among said cell site systems
- M. Locating means for automatically determining the locations of said cellular telephones by receiving and processing signals emitted during said periodic reverse control channel transmissions
- N. Database means for storing location data identifying the cellular telephones and their respective locations, and for providing access to said database to subscribers at remote locations⁶

⁶ As stated in D.I. 133, Andrew Corporation’s Letter to the Court of January 29, 2007, Andrew will not address the following claim limitations in this brief: Initiating, Periodic, Periodically, Timing Signal, Determining, Processing.

IV. LEGAL PRINCIPLES

Ordinary and customary meaning. Claim construction is a question of law for the district court to decide. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). The legal principles governing claim construction were recently summarized and clarified by the en banc Federal Circuit in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). The Court explained that claim terms “are generally given their ordinary and customary meaning, [which]...is the meaning that the [words] would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1312-13 (internal quotation marks and citations omitted); *see also Markman*, 52 F.3d at 986 (in construing claims, the courts focus on “what one of ordinary skill in the art at the time of the invention would have understood the term to mean.”); *Aquatex Indus., Inc. v. Techniche Solutions*, 419 F.3d 1374, 1382 (Fed. Cir. 2005) (holding that “fiberfill batting material” is made of synthetic or polyester fibers because, based on the teachings of the specification, one of ordinary skill in the industry would understand “fiberfill batting material” to have that composition).

To determine this meaning, “the court starts the decision making process by reviewing the same resources as would that person, *viz.*, the patent specification and the prosecution history.” *See Phillips*, 415 F.3d at 1313. In many cases, “the claims themselves

As also stated in D.I. 133, Andrew agrees with TruePosition that the function of the “means for processing said frames of data from said cell site systems to generate a table identifying individual cellular telephone signals and the differences in times of arrival of said cellular telephone signals among said cell site systems” is:

“processing said frames of data from said cell site systems to generate a table identifying individual cellular telephone signals and the differences in times of arrival of said cellular telephone signals among said cell site systems.”

provide substantial guidance as to the meaning of particular claim terms.” *See id.* at 1314. However, the claims “do not stand alone,” and “must be read in view of the specification, of which they are part.” *See id.* at 1315.

Specification. The specification will often provide “the single best guide to the meaning of a disputed term.” *See id.*; *see also Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). This is because “[t]he claims are directed to the invention that is described in the specification; they do not have meaning removed from the context from which they arose.” *Netword, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352 (Fed. Cir. 2001). Thus, “[t]he specification is of central importance in construing claims because ‘the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.’” *Aquatex Indus., Inc.*, 419 F.3d at 1380 (quoting *Phillips*, 415 F.3d at 1313). In addition, “the written description can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if that guidance is not provided in explicit definitional format.” *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1344 (Fed. Cir. 2001). And “[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.” *Id.* at 1341. Furthermore, “[w]here, as here, the disputed claim term[s] [are] technical or [] term[s] of art, “[t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.” *Aquatex Indus., Inc.*, 419 F.3d at 1380 (quoting *Phillips*, 415 F.3d at 1315).

Prosecution History. Intrinsic evidence also includes the prosecution history, which “like the specification,...provides evidence of how the PTO and the inventor understood the patent...[and] was created by the patentee in attempting to explain and obtain the patent.” *See Phillips*, 415 F.3d at 1317. It is thus proper to analyze the prosecution history in the process of claim construction. *See, e.g., E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1438 (Fed. Cir. 1988) (citations omitted) (“arguments made during the prosecution history are relevant in determining the meaning of the terms at issue....Using the prosecution history in that manner is different from prosecution history estoppel, which is applied as a limitation upon the doctrine of equivalents after the claims have been properly interpreted.”); *see also Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1457 (Fed. Cir. 1998) (en banc) (“the relevant inquiry” to see if the prosecution history limits the interpretation of a claim “is whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter”). *Elkay Mfg. v. Ebco Mfg. Co.*, 192 F.3d 973, 979 (Fed. Cir. 1999) (“Arguments made during prosecution of a patent application are given the same weight as claim amendments.”). This “makes sense, because ‘[t]he public has a right to rely on such definitive statements made during prosecution.’” *See Spectrum Int’l Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378 (Fed. Cir. 1998) quoting *Digital Biometrics v. Identix, Inc.*, 149 F.3d 1335, 1347 (Fed. Cir. 1998); *see also Catalina Mkt’n’g Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 813 (Fed. Cir. 2002) (in determining whether a disclaimer has been made, “[t]he relevant inquiry is whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter”). In short, “[c]laims may not be construed one way in order to obtain their allowance and in a different way against accused infringers.” *See, e.g., Spectrum*, 164 F.3d at 1379; *see also Hockerson-Halberstadt, Inc. v. Avia Group Int’l, Inc.*, 222 F.3d 951, 957 (Fed. Cir. 2000) (patentee is not

entitled to “a mulligan that would erase from the prosecution history the inventor’s disavowal of a particular aspect of a claim term’s meaning.”).

Extrinsic Evidence. Lastly, “[e]xtrinsic evidence in the form of expert testimony can be useful to a court for a variety of purposes, such as to provide background on the technology [], to explain how an invention works, to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of ordinary skill in the art, or to establish that a particular term in the patent or prior art has a particular meaning in the pertinent field.” *Conoco, Inc. v. Energy & Envtl. Int’l, L.C.*, 460 F.3d 1349, 1362 (Fed. Cir. 2006) (quoting *Phillips*, 415 F.3d at 1318). And while the Federal Circuit has “emphasized the importance of intrinsic evidence in claim construction, [it has] also authorized district courts to rely on extrinsic evidence,” such as expert testimony. *Phillips*, 415 F.3d at 1317. In construing claims, “what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law.” *Id.* at 1324. *See also Serio-US Indus., Inc. v. Plastic Recovery Techs. Corp.*, 459 F.3d 1311, 1319 (Fed. Cir. 2006) (trial court did not err in using extrinsic evidence to arrive at its claim construction where it consulted expert testimony “to provide background on the technology at issue, to explain how an invention works, to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.”).

Means-plus-function claim terms. Some claim terms, such as means-plus-function terms, require the court to apply special rules of construction. Under 35 U.S.C. § 112, Paragraph 6, a claim limitation “may be expressed as a means or step for performing a specified function,” and “such claim shall be construed to cover the corresponding structure,

material, or acts described in the specification and equivalents thereof.” A claim limitation that uses the word “means” presumptively invokes Section 112, Paragraph 6. *See, e.g., Personalized Media Comms. v. U.S. Int’l Trade Comm’n*, 161 F.3d 696, 703 (Fed. Cir. 1998). Here, the parties agree that many of the claim limitations are means-plus-function limitations.

When construing a Section 112, Paragraph 6 claim limitation, the Court first identifies the function of the limitation. *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1321 (Fed. Cir. 2003). The Court then identifies the corresponding structure found in the patent’s written description for performing that function. *Frank’s Casing Crew & Rental Tools, Inc. v. Weatherford Int’l, Inc.*, 389 F.3d 1370, 1376 (Fed. Cir. 2004). The “corresponding structure” in the specification is the structure clearly linked to the function recited in the claim: “[t]his duty to link or associate structure to function is the *quid pro quo* for the convenience of employing § 112, ¶ 6.” *Default Proof Credit Card System, Inc. v. Home Depot U.S.A., Inc. (d/b/a The Home Depot)*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). “Failure to disclose adequate structure corresponding to the recited function in accordance with 35 U.S.C. § 112, paragraph 1, results in the claim being of indefinite scope, and thus invalid, under 35 U.S.C. § 112, paragraph 2.” *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1319 (Fed. Cir. 2003).

Additionally, although equivalents to the linked corresponding structure are included in the properly construed means-plus-function term, prosecution history estoppel limits which equivalent structures performing the named function can be included in the construction. “When a patentee advises the examiner (and the public after patent issuance) that a particular structure is not within his invention, the patentee is not permitted to assert in a subsequent infringement action that the same structure is equivalent to the structure

described in the patentee's specification for purposes of section 112 paragraph 6." *Ballard Med. Prods. v. Allegiance Healthcare Corp.*, 268 F.3d 1352, 1359 (Fed. Cir. 2001).

When a means-plus-function claim element contains a computer-implemented function, the Federal Circuit has confirmed that the corresponding structure is the specific algorithm disclosed in the specification that performs the claimed function. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1348 (Fed. Cir. 1999). When no such specific algorithm is disclosed, the claim must be held invalid for indefiniteness. *See Gobeli Research, Ltd. v. Apple Computer Inc.*, 384 F. Supp. 2d 1016, 1022-23 (E.D. Tex. 2005).

V. ANDREW'S PROPOSED CLAIM INTERPRETATIONS SHOULD BE ADOPTED

For each claim limitation the parties have asked the Court to construe, Andrew has set forth below the parties' respective proposed claim constructions, the differences between the parties' proposals and an explanation of why Andrew's proposed construction should be adopted.

A. REVERSE CONTROL CHANNEL(S) (CLAIMS 1, 22, 31)

1. The Parties' Proposed Constructions of "Reverse Control Channel"

| | |
|----------------------|--|
| Andrew: | A channel that carries only signaling information from a mobile terminal to a base station in the format specified in ANSI 553 |
| TruePosition: | A control channel(s) from a cellular telephone(s) to a cell site(s) |

2. Differences Between The Parties' Proposed Constructions

There are two main differences between the parties' proposed constructions. First, Andrew's proposed construction requires a reverse control channel to carry only signaling information, consistent with the definitions announced by TruePosition's Chief Technical Officer, its current expert witness, and its prior expert witness. TruePosition, on the other hand, tries to ignore its witnesses' knowledge of the art and the fact that a "reverse control

channel” can only communicate signaling information. Second, unlike TruePosition’s proposal, Andrew’s proposed construction recognizes that a “reverse control channel” is a term of art designating a certain channel set out in relevant standards (ANSI 553).

3. Why Andrew’s Proposed Construction Should Be Adopted

Andrew’s construction of “reverse control channel” should be adopted because the evidence demonstrates that a “reverse control channel” is a term of art and that a “reverse control channel” carries only signaling information.

First, both intrinsic and extrinsic evidence show that a “reverse control channel” communicates *only* signaling information, while the disclaimed voice channel⁷ carries *both* signaling and voice information. *See, e.g.:*

(a) ‘144 Patent col.5 ll.35-41 (A19):

“The system also comprises means for providing location data to a specific cellular telephone user upon request by using, for example, CPDP without setting up a voice call (‘CPDP’ represents the Cellular Packet Data Protocol, which involves sending data over voice channels when the voice channels would not otherwise be in use).”

(b) Testimony of TruePosition’s Chief Technical Officer, Rob Anderson:

Q. Do control channels communicate anything other than signaling information?

A. No.

⁷ As explained above at p. 4, TruePosition disclaimed traffic (or voice) channels during prosecution of the ‘144 patent. *See, e.g.*, Information Disclosure Statement Supporting Petition To Make Special (A219-229) (distinguishing numerous references for failing to disclose monitoring control channels). It is necessary to consider these arguments and disclaimers in arriving at a construction of the term “reverse control channel.” *See, e.g., E.I. du Pont de Nemours & Co.*, 849 F.2d at 1438 (“arguments made during the prosecution history are relevant in determining the meaning of the terms at issue....Using the prosecution history in that manner is different from prosecution history estoppel, which is applied as a limitation upon the doctrine of equivalents after the claims have been properly interpreted.”).

Q. Are you aware of any channels in the GSM system that would carry both signaling and traffic information?

A. Yes; a traffic channel would carry *both* signaling and traffic information.

Q. Any other channels, other than the traffic channel?

A. Not that I am aware of.

Anderson Sep. 21, 2006 Dep. 42:5-7; 166:25-167:8 (A80, A92-93) (emphasis added).

(c) In addition, TruePosition's expert witness' position in the previous litigation against Andrew's predecessor comports with Andrew's construction:

- "In 1995 and 1996, a person of ordinary skill in the art would have been aware that a wireless cellular communication system had two types of channels – a control channel and a voice channel. ... The voice channel [] contains both user information (voice and other user data) *and* certain system control information."

Schwartz Report at 20-21, ¶ 57 (A113-114) (emphasis added).

- "Although called the "voice channel," a person of ordinary skill in the art in 1995-1996 would have been aware that the voice channel has both voice data and control type information...."

Id. at 22, ¶ 61 (A115).

Second, both intrinsic and extrinsic evidence make clear that a reverse control channel is a term of art. As discussed above at pages 5-6, the specification of the '144 patent unequivocally teaches a specified analog cellular system and that "reverse control channels" are a specific entity within that system. Furthermore, as also explained above, TruePosition's witnesses, the named inventors, and TruePosition's prior expert report discussing the '144 patent all confirm this plain reading of the claims and specification. *See, e.g.:*

(d) Testimony of Inventor Dr. Curtis Knight:

Q. What are analog control channels?

A. I'm not sure I know what was meant by that but what we had in mind was AMPS [the disclosed analog cellular system] when we were writing this.

Knight Dep. 90:11-13 (A72).

(e) Testimony of Inventor Dr. John Webber:

Q. What is an analog control channel?

A. I believe what we meant here is it is the control channel associated with the analog cell telephone system.

Webber Dep. 23:15-18 (A244).

(f) Testimony of TruePosition's President (and former Chief Technical Officer) Joe Sheehan:

Q. What control channels are called out in the AMPS specification?

A. I believe there is forward control channels and there is reverse control channels. There may be others, I'm not certain of that.

Sheehan Dep. 31:14-18, Oct. 19, 2006 (A136.1).

Therefore, because a "reverse control channel": (1) is a term of art; and (2) carries only signaling information, Andrew's proposed construction should be adopted.

B. REVERSE (CLAIMS 1, 22, 31)

1. The Parties' Constructions of "Reverse"

| | |
|----------------------|--|
| Andrew: | Should not be construed separately from the unitary phrase "reverse control channel" To the extent the Court chooses to construe "reverse" out of context, it means: From a mobile terminal to a base station, in the format specified by ANSI 553 |
| TruePosition: | From a cellular telephone(s) to a cell site(s) |

2. Differences Between The Parties' Proposed Constructions, And Why Andrew's Proposed Construction Should Be Adopted

Andrew's position is that "reverse" should not be construed separately from the unitary phrase "reverse control channel" because as shown above, "reverse control channel" is a term of art. However, if the Court should find it necessary to construe "reverse" in isolation, Andrew proposes a construction that gives the term the necessary context of the cellular system taught by the specification. TruePosition's advocated construction of "reverse", while correctly describing what the "reverse" direction is, does not account for the fact that "reverse control channel" is a term of art.

C. CONTROL CHANNEL(S) (CLAIMS 1, 22, 31)

1. The Parties' Constructions of "Control Channel"

| | |
|----------------------|---|
| Andrew: | <p>Should not be construed separately from the unitary phrase "reverse control channel"</p> <p>To the extent the Court chooses to construe "control channel" out of context, it means:</p> <p>A channel that carries only signaling information in the format specified by ANSI 553</p> |
| TruePosition: | Channel(s) used to transmit control information to and from a cellular telephone(s); not voice channel(s) |

2. Differences Between The Parties' Proposed Constructions, And Why Andrew's Proposed Construction Should Be Adopted

Andrew's position is that "control channel" should not be construed separately from the unitary phrase "reverse control channel" because as shown above, "reverse control channel" is a term of art. However, if the Court should find it necessary to construe "control channel" in isolation, Andrew proposes a construction that gives the term the proper context of the cellular system described in the patent specification. In addition, Andrew's proposed construction recognizes that a "control channel" carries only signaling information (as opposed to a traffic/voice channel, which carries both traffic and signaling information). TruePosition's advocated construction of "control channel" does not account for the fact that

“reverse control channel” is a term of art, nor the fact that “control channels” can only carry signaling information.

As explained above, TruePosition’s own witnesses have testified that “control channels” carry *only* control (“signaling”) information:

Q. Do control channels communicate anything other than signaling information?

A. No.

Anderson Sep. 21, 2006 Dep. 42:5-7 (A80). *See also* Harry Newton, “Newton’s Telecom Dictionary” (2006) (22nd ed.) at 258 (A260) (“control channel: A control channel is a logic channel carrying network information rather than actual voice or data messages.”).

In addition, TruePosition’s construction does not account for the fact that a “reverse control channel” is a specific entity. Rather, when TruePosition combines its definitions of “reverse” and “control channel,” it improperly implies that *any* channel carrying any type of control information from a mobile telephone to a base station is a “reverse control channel.”

D. PRESCRIBED SET (CLAIMS 1, 22, 31)

1. The Parties’ Constructions of “Prescribed Set”

| | |
|----------------------|--|
| Andrew: | The set of frequency bands that are assigned to convey information in the format specified in ANSI 553 |
| TruePosition: | Set described by a cellular telephone system protocol |

2. Differences Between The Parties’ Constructions

Andrew’s position is that “prescribed set” should be accorded a meaning consistent with the teachings in the specification; thus, Andrew specifies what exact set of channels is required by the claims. TruePosition’s construction does not adhere to the specification and does not specify what set of channels is required by the claim.

3. Why Andrew's Proposed Construction Should Be Adopted

The specification of the '144 patent makes clear that the named inventors of the '144 patent intended to claim a location system that used specific channels in a specific cellular system, (which is described in ANSI 553):

- "A separate set of channels is assigned to each cell in a cluster. However, the sets used in one cluster are reassigned in the other cluster, thus reusing the available spectrum." '144 Patent col.1 ll.56-60 (A17).
- "The Federal Communications Commission (FCC) has allocated a 25 MHz spectrum for use by cellular systems. This spectrum is divided into two 12.5 MHz bands, one of which is available to wire line common carriers only and the other of which is available to non-wire line common carriers only. In any given system, the non-wire line service provider operates within the "A side" of the spectrum and the wire line provider operates within the "B side" of the spectrum. Cellular channels are 30 KHz wide and include control channels and voice channels. In particular, the twenty-one control channels for "A" systems are numbered 313 through 333 and occupy a 30 KHz band of frequencies 834.390 MHz to 834.990 MHz. The control channels for "B" systems are numbered 334 through 354 and occupy 835.020 MHz to 835.620 MHz." '144 Patent col.1 l.66 –col.2 l.13 (A17).

In addition, named inventor testimony confirms the teachings of the specification:

Q. Dr. Webber, if I understood you correctly, you also mentioned selection of one of several control channels. Did I understand you correctly?

A. Yes.

Q. What set of control channels are you talking about?

A. The control channels I'm talking about in particular in this – in the implementation we did in 1992 is the set of 21 frequencies – actually, frequency bands – within a given region of the spectrum around 900 megahertz, which were assigned to the function of being the control channels by which digital information is transmitted from the cell telephone to a tower and from a tower back to the telephone.

Webber Dep. 50:17 – 51:7 (A252-253); *see also* Knight Dep. 92:3-5 (A74) (“The cellular telephone operators by mutual agreement defined a certain set of channels, I don’t remember how many, for control channels.”).

Andrew’s construction comports with the specification (and the named inventors’ testimony), because it clarifies that the “prescribed set” is a specific set of frequency bands taught in the specification. TruePosition’s construction is vague and leaves the metes and bounds of the claim wholly undefined.

E. TIME STAMP BITS REPRESENTING THE TIME AT WHICH SAID CELLULAR TELEPHONE SIGNALS WERE RECEIVED (CLAIM 1)

1. The Parties’ Constructions of “Time Stamp Bits Representing The Time At Which Said Cellular Telephone Signals Were Received”

| | |
|----------------------|---|
| Andrew: | Binary digits representing the calendar date and clock time at which signals were received at the cell site |
| TruePosition: | No explicit construction is required. To the extent the Court decides otherwise, the phrase means: Binary units of computer information that indicate a time and that symbolize, typify or describe when said cellular telephone signals were received |

2. Differences Between The Parties’ Constructions

Andrew’s position is that this term should be construed, and that the construction should explicitly explain that the time stamp bits should represent an actual calendar date and clock time when the signals were received at the cell site. TruePosition’s primary position is that the term does not need to be construed. Its secondary position is to advocate for a much more general construction than Andrew’s construction. Rather than specifying that the time should be represented as a date and clock time, TruePosition advocates the very general and vague language of “binary units of computer information that indicate a time.” In addition, TruePosition changes the claim term “representing” to “symbolize, typify or describe”.

Lastly, TruePosition's construction does not specify that that time at issue is the time at which the signal was received by the cell site — rather, its construction just says that telephone signals “were received.”

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's construction should be adopted over TruePosition's because TruePosition's construction is vague and ambiguous and does not sufficiently clarify the term. *See, e.g., U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims....”). TruePosition's language of “binary units of computer information that indicate a time” does not sufficiently explain what type of “indicat[ion] of time” is required by the claim. Likewise, the phrase “symbolize, typify or describe” does not clarify the claim's metes and bounds. Lastly, the fact that TruePosition uses only the phrase “were received”, instead of “were received at the cell site” also renders its construction unclear.

In contrast, Andrew's construction accords the plain and ordinary meaning to the term “time” — calendar date and clock time. It also clarifies the claim term by explaining that the signal is received by the cell site. Given that this “time stamp bits” limitation appears in the part of Claim 1 describing the required “cell site systems” (*see* Claim 1(a) (“at least three cell site systems, each cell site system comprising...”), a construction that leaves open the possibility that the time stamps contain something other than the time at which signals were received at the cell site cannot be correct.

F. TIME STAMP BITS REPRESENTING THE TIME AT WHICH SAID FRAMES WERE PRODUCED AT EACH CELL SITE (CLAIM 31)

1. The Parties' Constructions of "Time at Which Said Frames Were Produced at Each Cell Site"

| | |
|----------------------|---|
| Andrew: | Binary digits representing the calendar date and clock time at which said frames were produced at each cell site |
| TruePosition: | No explicit construction is required. To the extent the Court decides otherwise, the phrase means: Binary units of computer information that indicate a time and that symbolize, typify or describe when said frames were produced at each cell site |

2. Differences Between The Parties' Constructions

Andrew's position is that this term should be construed, and that the construction should explicitly explain that the time stamp bits should represent an actual calendar date and clock time when the signals were received at the cell site. TruePosition's primary position is that the term does not need to be construed. Its secondary position is to advocate for a much more general construction than Andrew's construction. Rather than specifying that the time should be represented as a date and clock time, TruePosition advocates the very general and vague language of "binary units of computer information that indicate a time." In addition, TruePosition changes the claim term "representing" to "symbolize, typify or describe".

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's construction should be adopted over TruePosition's because TruePosition's construction is vague and ambiguous and does not sufficiently clarify the term. *See, e.g., U.S. Surgical Corp.*, 103 F.3d at 1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims...."). TruePosition's language of "binary units of computer information that indicate a time" does not sufficiently explain what type of "indicat[ion] of time" is required by the claim. Likewise, the phrase "symbolize, typify or describe"

does not clarify the claim's metes and bounds. In contrast, Andrew's construction accords the plain and ordinary meaning to the term "time" — calendar date and clock time. It also clarifies the claim term by explaining that the signal is received by the cell site.

G. SUBSCRIBERS (CLAIMS 22, 32)

1. The Parties' Constructions of "Subscribers"

| | |
|----------------------|--|
| Andrew: | Users of the mobile cellular telephones who receive and pay for cellular telephone service |
| TruePosition: | No explicit construction is required. To the extent the Court decides otherwise, the term means: Individuals who agree to receive and pay for a service |

2. Differences Between The Parties' Constructions

Andrew's position is that this term should be construed, and that the construction should explicitly explain that subscribers are the "users of the mobile cellular telephones who receive and pay for **cellular telephone service**." TruePosition's primary position is that the term does not need to be construed. Its secondary position is to advocate for a much more general construction than Andrew's construction; TruePosition advocates a construction of "individuals who agree to receive and pay for **a service**," rather than cellular telephone service.

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's construction should be adopted over TruePosition's for two reasons: (1) Andrew's construction comports with the teachings in the specification; and (2) TruePosition's construction is vague and ambiguous and does not sufficiently clarify the term.

First, the specification of the '144 patent teaches that a "subscriber" is a user of a mobile phone:

- "New subscribers, apparently recognizing the many advantages in being able to initiate and receive calls while away from home, are being enrolled in ever-increasing numbers. Indeed, in many cities, the competition between the

A and B sides to enlist new subscribers is fierce. Accordingly, there is a great need for new services to offer current and potential subscribers.” ‘144 Patent col.3 ll.42-49 (A18).

- “a location system in accordance with the present invention could control the frequency of control channel transmissions and offer different subscribers different location information update rates” ‘144 Patent col.4 ll.47-50 (A18).
- “offer subscribers billing rates that vary on the basis of the location” ‘144 Patent col.19 ll.9-10 (A26).
- “a location tape, containing a record over time of the locations of the subscribers’ cellular telephones, may be merged with a billing tape to produce a modified billing tape” ‘144 Patent col.19 ll.11-14 (A26).

Thus, TruePosition’s construction improperly contradicts the specification. In addition, TruePosition’s construction of “individuals who agree to receive and pay for a service” (emphasis added) is improper because it is so overbroad as to render the claim without limits.

H. TABLE IDENTIFYING INDIVIDUAL CELLULAR TELEPHONE SIGNALS (CLAIM 1)

1. The Parties’ Constructions of “Table Identifying Individual Cellular Telephone Signals”

| | |
|----------------------|---|
| Andrew: | Table containing a code uniquely associated with the cellular telephone that transmitted the signals |
| TruePosition: | No explicit construction is required. To the extent the Court decides otherwise, the phrase means: Table identifying particular cellular telephone signals |

2. Differences Between The Parties’ Constructions

Andrew’s position is that this term should be construed, and that the construction should explicitly explain that the claimed table must contain a “code uniquely associated with the cellular telephone that transmitted the signals.” TruePosition’s primary position is that the term does not need to be construed. Its secondary position is to advocate for an extremely general construction that basically repeats the claim language and does not clarify the term “identifying.”

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's construction should be adopted over TruePosition's for two reasons: (1) Andrew's construction comports with the teachings in the specification; and (2) TruePosition's construction is vague and ambiguous and does not sufficiently clarify the term, but rather, simply repeats it.

Claim 1 requires a table "identifying individual telephone signals." '144 Patent Claim 1 (A26). The specification explains that "[w]hen a called telephone detects its number in the incoming data stream, it sends *its* identification back to the system" '144 Patent col.3 ll.27-29 (A18) (emphasis added). Thus, the specification teaches that the claimed identification concerns the cellular phone's unique identification. *See also* '144 Patent col.8 ll.36-38 (A20) ("The data stream provided to the database comprises a set of numbers, the first number being the telephone number of the telephone..."). *See also* Fig. 7 (A9) ("Decode Phone Number For Each Signal, Using Strongest Sample"). Because the claims concern each cellular telephone's unique identification information, Andrew's construction of "table identifying individual cellular telephone signals" as a "table containing a code uniquely associated with the cellular telephone that transmitted the signals" is correct. In contrast, TruePosition's construction is meaningless because it simply repeats the claim language.

The testimony of named inventor Dr. John Webber confirmed the teachings in the specification:

Q. What is that table [identifying individual cellular telephone signals]?

A. *That table identifying the cell telephone signals is a table which identifies those -- essentially, the telephone numbers that have been decoded from the individual data streams.* That has nothing to do with the cross-correlation process. This is for convenience.

Q. That's the stuff that goes into the identifying database?

A. Right. So you pop out a time, a telephone number and a time difference of arrival for that particular pair of antennas, and the decoding of that signal is done independently for each data stream and separately from the cross-correlation process.

Webber Dep. 112:3-17 (A256) (emphasis added).

Q. Yes, if you could please explain what you mean by connect the identification [] information.

A. ...it's necessary to know for the signals which are located what transmitter it is associated with, in particular in this case, *with which particular telephone a particular detected transmission is associated*. In order to make that determination, it's necessary to – well, the most convenient way to do that is to *decode the telephone number or other identifying information within the transmission*. And so the contribution of Lou Stilp to making a system which obtained the *objective of identifying the position of a particular telephone must involve not only measuring the position of a particular transmission, but associating it with that particular telephone*.

Q. You're saying you need to figure out the specific identification of any particular phone?

A. Right. ... [U]nless I had information about the identification associated with a particular signal, namely the *telephone number, the registration number, whatever, I can't tell you which one of those [cellular phones] is the one that you want*.

Id. at 33:21-24 (A247); 34:21-35:13 (A248); 35:18-22 (A249) (emphasis added).

Therefore, because Andrew's construction comports with the teachings in the specification and clarifies the term, it should be adopted over TruePosition's mere recitation of the claim language.

I. DATA IDENTIFYING THE CELLULAR TELEPHONES (CLAIMS 22, 32)

1. The Parties' Constructions of "Data Identifying the Cellular Telephones"

| | |
|----------------------|--|
| Andrew: | The code uniquely associated with the cellular telephone |
| TruePosition: | <p>No explicit construction is required. To the extent the Court decides otherwise, the phrase means:</p> <p>In Claim 22,</p> <p>Data identifying the "multiple mobile cellular telephones each initiating periodic signal transmissions over one of a prescribed set of reverse control channels" recited in claim 22</p> <p>In Claim 32,</p> <p>Data identifying the "cellular telephones responsible for said cellular telephone signals" recited in claim 31</p> |

2. Differences Between The Parties' Constructions

Andrew's position is that this term should be construed, and that the construction should clarify that "identifying" means "code uniquely associated with the cellular telephone." TruePosition's primary position is that the term does not need to be construed. Its secondary position is to again advocate for an extremely general construction that basically repeats the claim language and does not clarify the term "identifying."

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's construction should be adopted over TruePosition's for the same two reasons that its construction of "table identifying individual cellular telephone signals" should be adopted: (1) Andrew's construction comports with the teachings in the specification; and (2) TruePosition's construction is vague and ambiguous and does not sufficiently clarify the term, but rather, simply repeats it.

As explained above in Section H, the specification explains that the claimed identification concerns the cellular phone's unique identification. See '144 Patent col.3 ll.27-

29 (A18); col.8 ll.36-38 (A20); Fig. 7 (A9). As also explained above, the teachings of the specification were confirmed by TruePosition's expert, and named inventor Dr. John Webber. Therefore, because Andrew's construction comports with the teachings in the specification and clarifies the term, it should be adopted over TruePosition's recitation of the claim language.

J. PROCESSING SAID FRAMES OF DATA TO IDENTIFY INDIVIDUAL CELLULAR TELEPHONE SIGNALS (CLAIM 31)

1. The Parties' Constructions of "Processing Said Frames of Data to Identify Individual Cellular Telephone Signals"

| | |
|----------------------|--|
| Andrew: | Extracting from the data frames a code uniquely associated with the cellular telephone that transmitted the signals |
| TruePosition: | No explicit construction is required. To the extent the Court decides otherwise, the phrase means: Processing said frames of data to identify particular cellular telephone signals |

2. Differences Between The Parties' Constructions

Andrew's position is that this term should be construed, and that the construction should clarify that "identifying" means "code uniquely associated with the cellular telephone." TruePosition's primary position is that the term does not need to be construed. Its secondary position is to again advocate for an extremely general construction that basically repeats the claim language.

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's construction should be adopted over TruePosition's for the same two reasons that its constructions of "table identifying individual cellular telephone signals" and "identifying individual cellular telephone signals" should be adopted: (1) Andrew's construction comports with the teachings in the specification; and (2) TruePosition's construction is vague and ambiguous and does not sufficiently clarify the term, but rather, simply repeats it.

As explained above in Sections H and I, the specification explains that the claimed identification concerns the cellular phone's unique identification. *See* '144 Patent col.3 ll.27-29 (A18); col.8 ll.36-38 (A20); Fig. 7 (A9). As also explained above, the teachings of the specification were confirmed by TruePosition's expert, and named inventor Dr. John Webber. Therefore, because — like Andrew's constructions of "table identifying individual cellular telephone signals" and "identifying individual cellular telephone signals" — Andrew's construction comports with the teachings in the specification and clarifies the term, it should be adopted over TruePosition's recitation of the claim language.

K. MEANS FOR PROCESSING SAID FRAMES OF DATA FROM SAID CELL SITE SYSTEMS TO GENERATE A TABLE IDENTIFYING INDIVIDUAL CELLULAR TELEPHONE SIGNALS AND THE DIFFERENCES IN TIMES OF ARRIVAL OF SAID CELLULAR TELEPHONE SIGNALS AMONG SAID CELL SITE SYSTEMS (CLAIM 1)

1. The Parties' Constructions of "Means for Processing Said Frames of Data From Said Cell Site Systems to Generate a Table Identifying Individual Cellular Telephone Signals and the Differences in Times of Arrival of Said Cellular Telephone Signals Among Said Cell Site Systems"

| | |
|----------------------|---|
| Andrew: | <p>Function: processing said frames of data from said cell site systems to generate a table identifying individual cellular telephone signals and the differences in times of arrival of said cellular telephone signals among said cell site systems</p> <p>Structure: The elements recited in Figures 6 and 6A, the operations reflected in Figure 7, including algorithms disclosed in the patent</p> |
| TruePosition: | <p>Function: processing said frames of data from said cell site systems to generate a table identifying individual cellular telephone signals and the differences in times of arrival of said cellular telephone signals among said cell site systems</p> <p>Structure: A computer processor programmed to perform the algorithm disclosed at col.13 ll.33-56 (ending with the acronym "TDOA"), Fig. 7 at the First Four Blocks and Table, col.17 ll.26-68 (minus any reference to "frequency difference data" or "frequency difference results") and Figs. 8a-8b (minus any reference to "frequency differences"), or equivalents of such a computer processor</p> |

2. Differences Between The Parties' Constructions

Andrew and TruePosition agree that the “means for processing” limitation is subject to ¶ 112(6), and also agree on the function. However, the parties disagree as to the corresponding structure. Andrew’s proposed structure is the structure simply and clearly described in the specification; TruePosition picks and chooses various parts of the specification to cobble together its proposed structure.

3. Why Andrew’s Proposed Construction Should Be Adopted

Andrew’s proposed structure for the “means for processing” limitation is “the elements recited in Figures 6 and 6A, the operations reflected in Figure 7, including algorithms disclosed in the patent.” Generally speaking, the patent describes the “Central Site System” in Columns 12 - 16. The patent specifically explains that “FIG. 7 is a simplified flowchart of the processing performed by the central site system 16.” ‘144 Patent col.13 ll.33-34 (A23). The patent goes on to describe each step of the algorithm at col.13 l.36 – col.14 l.14 (A23). The patent also specifically says that “FIG. 6 is a block diagram of the central site system 16.” ‘144 Patent col.12 ll.3-4 (A22).

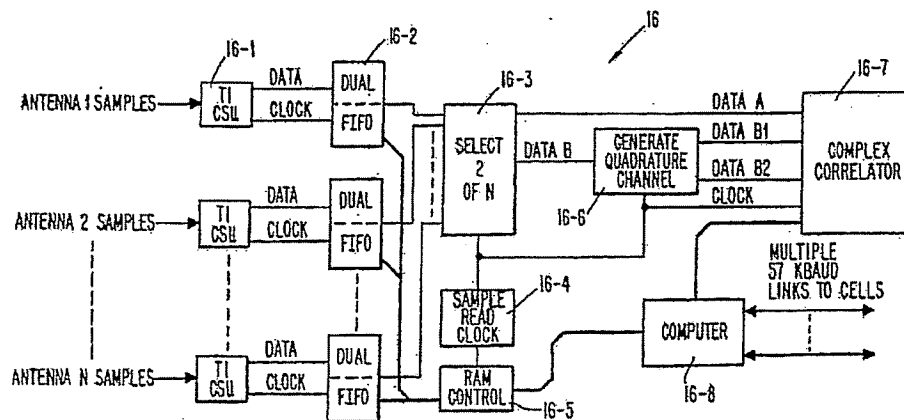


Fig. 6

‘144 Pat., Figure 6 (A7)

The patent also specifically says that Figure 6A depicts the “cross-correlation method” required by the claim. ‘144 Patent col.12 ll.48-54 (A22). (“Referring now to FIG. 6A, the predetection cross-correlation method employed in preferred embodiments of the present invention involves inputting a sampled strong cellular signal from a first cell site to an input 72 and inputting a delayed sampled cellular signal from any of second, third, fourth, etc., cell sites to an input 70.”).

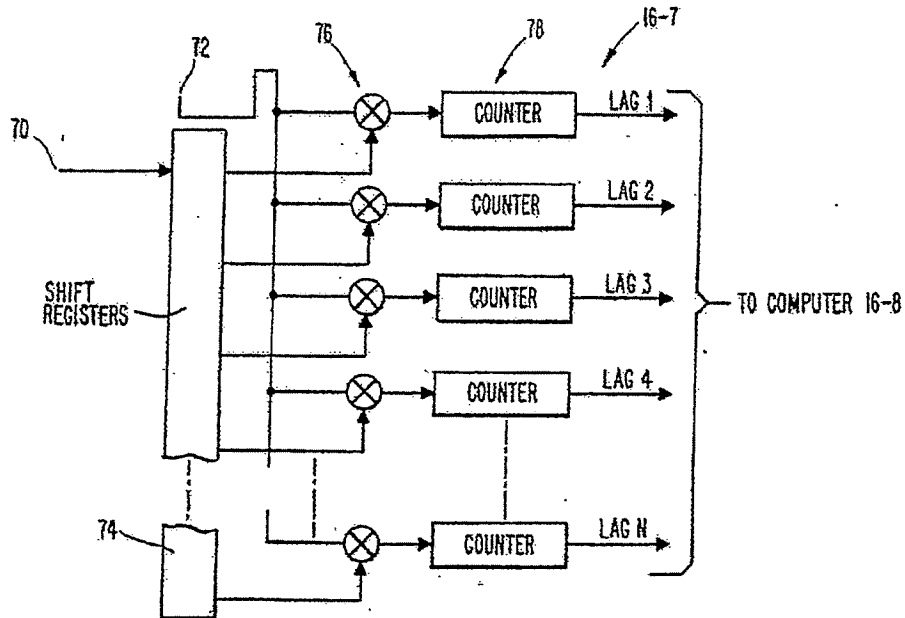


Fig. 6A

‘144 Pat., Figure 6A (A8)

In contrast, for its structure for “means for processing,” TruePosition cites to only *part* of the description of the “Location System Operation”, parts of Figure 7, and Parts of Figures 8a and 8b. TruePosition goes so far as to simply subtract certain portions of the disclosed structure without justification. See TruePosition’s construction (identifying structure as “col.17 ll.26-68 (minus any reference to ‘frequency difference data’ or ‘frequency difference results’) and Figs. 8a-8b (minus any reference to ‘frequency

differences’)). This is improper — the only part of the algorithm that the specification teaches is optional is whether the billing data is provided to the subscriber. See ‘144 Patent col.14 ll.5-14 (A23) (“Finally, the data may be provided to a user, dispatcher, or billing system. The fields (data) sent to the user, dispatcher, or billing system would preferably include the data bits representing the dialed digits, the status bits, and the message type from the standard cellular control channel message. The data bits could be used by the user or a dispatcher to send coded messages to a display terminal. Thus, in addition to the location services, the location system could provide a limited form of messaging at no incremental cost.”).

L. MEANS FOR DETERMINING, ON THE BASIS OF SAID TIMES OF ARRIVAL DIFFERENCES, THE LOCATIONS OF THE CELLULAR TELEPHONES RESPONSIBLE FOR SAID CELLULAR TELEPHONE SIGNALS (CLAIM 1)

1. The Parties’ Constructions of “Means for Determining, on the Basis of Said Times of Arrival Differences, the Locations of the Cellular Telephones Responsible for Said Cellular Telephone Signals”

| | |
|----------------------|---|
| Andrew: | Function: to determine on the basis of time of arrival differences, the locations of the mobile cellular telephones whose signals are received Structure: algorithms disclosed in ‘144 Patent col.16 l.5 – col.19 l.2, and Figures cited therein |
| TruePosition: | Function: determining, on the basis of said times of arrival differences, the locations of the cellular telephones responsible for said cellular telephone signals Structure: A computer processor programmed to perform the algorithm disclosed at col.13 l.58 (beginning with the word “This”) through col.13 l.62 (ending with the letter “C”), Fig. 7, at the Fifth and Sixth Blocks, col.18 ll.1-34 (ending with “0.0001,” but minus any reference to “frequencies”) and Fig. 8c through Top Four Elements of Fig. 8d (minus any reference to “frequencies”), or equivalents of such a computer processor |

2. Differences Between The Parties' Constructions

Andrew and TruePosition agree that the "means for determining" limitation is subject to ¶ 112(6). The parties' proposed functions are similar and without substantive difference. However, the parties disagree on structure. Andrew again adheres to the structure disclosed in the specification, while TruePosition picks and chooses from disparate parts of the specification, and wholly ignores other parts.

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's proposed structure for the "means for determining" limitation is "algorithms disclosed in '144 Patent col.16 l.5 – col.19 l.2, and Figures cited therein." This section of the '144 patent is entitled "Location Calculation." '144 Patent col.16 l.3 (A24). The '144 patent makes clear that central to location estimation is the fact that a "least squares difference calculation" is performed. See '144 Patent col.16 ll.26-48 (A24).

"The least squares difference calculation takes the form:

$$LSD = [Q_{12}(Delay_{T_{12}} - Delay_{O_{12}})^2 + Q_{13}(Delay_{T_{13}} - Delay_{O_{13}})^2 + Q_{23}(Delay_{T_{23}} - Delay_{O_{23}})^2]$$

'144 Pat., Col.16 ll.39-41 (A24)

See also '144 Patent col.7 ll.11-25 (A20). ("In addition, the least squares difference is preferably given by...."). TruePosition's proposed structure does not include the required least squares difference equation, and fails for that reason alone.

In addition, TruePosition again subtracts disclosed structure from its construction without justification. See TruePosition construction of "means for determining" structure (pointing to "col.18 ll.1-34 (ending with '0.0001,' but minus any reference to 'frequencies')").

M. LOCATING MEANS FOR AUTOMATICALLY DETERMINING THE LOCATIONS OF SAID CELLULAR TELEPHONES BY RECEIVING AND PROCESSING SIGNALS EMITTED DURING SAID PERIODIC REVERSE CONTROL CHANNEL TRANSMISSIONS (CLAIM 22)

1. The Parties' Constructions of "Locating Means for Automatically Determining the Locations of Said Cellular Telephones by Receiving and Processing Signals Emitted During Said Periodic Reverse Control Channel Transmissions"'

| | |
|----------------------|---|
| Andrew: | <p>Function: automatically determine the location of cellular telephones by monitoring every periodic reverse control channel transmission emitted from every mobile cellular telephone in the network to determine the location of all such mobile cellular telephones without a specific request to locate them, and processing the signals emitted during the phones' reverse control channel transmissions</p> <p>Structure: algorithms disclosed in '144 Patent col.16 l.5 – col.19 l.2, and Figures cited therein</p> |
| TruePosition: | <p>Function: automatically determining the locations of said cellular telephones by receiving and processing signals emitted during said periodic reverse control channel transmissions</p> <p>Structure: A computer processor programmed to perform the algorithm disclosed at col.13 ll.33-62 (ending with the letter "C"), Figure 7 at the First Six Blocks and Table, col.17 l.26 – col.18 l.34 (ending with "0.00001," but minus any reference to "frequency difference data," "frequency difference results" or "frequencies") and Figs. 8a through the Top Four Elements of Fig. 8d (minus any reference to "frequency differences" or "frequencies"), or equivalents of such a computer processor</p> |

2. Differences Between The Parties' Constructions

Andrew and TruePosition agree that the "locating means for automatically determining" limitation is subject to ¶ 112(6). The parties' proposed functions are similar, although Andrew's construction is more specific. However, the parties again disagree on structure. Andrew again adheres to the structure disclosed in the specification, while TruePosition picks and chooses from disparate parts of the specification and wholly ignores other parts.

3. Why Andrew's Proposed Construction Should Be Adopted

Andrew's proposed structure for the "locating means...." limitation is "algorithms disclosed in '144 Patent col.16 l.5 – col.19 l.2, and Figures cited therein." This section of the '144 patent is entitled "Location Calculation." '144 Patent col.16 l.3 (A24). As explained above in Section L, the '144 patent makes clear that central to location estimation is the fact that a "least squares difference calculation" is performed. See '144 Patent col.16 ll.26-48 (A24).

"The least squares difference calculation takes the form:

$$LSD = [Q_{12}(Delay_{T12} - Delay_{O_{12}})^2 + Q_{13}(Delay_{T13} - Delay_{O_{13}})^2 + Q_{xy}(Delay_{Txy} - Delay_{O_{xy}})^2]$$

'144 Pat., Col.16 ll.39-41 (A24)

See also '144 Patent col.7 ll.11-25 (A20). ("In addition, the least squares difference is preferably given by...."). Like its structure for "means for determining...", TruePosition's structure for "locating means...." does not include the required least squares difference equation, and fails for that reason alone.

In addition, TruePosition again subtracts disclosed structure from its construction without justification. See TruePosition construction for "locating means" structure (pointing to "col.17 l.26 – col.18 l.34 (ending with '0.00001,' but minus any reference to 'frequency difference data,' 'frequency difference results' or 'frequencies') and Figs. 8a through the Top Four Elements of Fig. 8d (minus any reference to 'frequency differences' or 'frequencies')").

N. DATABASE MEANS FOR STORING LOCATION DATA IDENTIFYING THE CELLULAR TELEPHONES AND THEIR RESPECTIVE LOCATIONS, AND FOR PROVIDING ACCESS TO SAID DATABASE TO SUBSCRIBERS AT REMOTE LOCATIONS (CLAIM 22)

1. **The Parties' Constructions of "Database Means for Storing Location Data Identifying the Cellular Telephones and Their Respective Locations, and for Providing Access to Said Database to Subscribers at Remote Locations"**

| | |
|----------------------|--|
| Andrew: | <p>Function: storing location data identifying the cellular telephones and their respective locations, and for providing access to the database to subscribers at remote locations</p> <p>Structure: a database or local disk storage device containing the unique code corresponding to each cellular telephone and a terminal coupled to the database via (1) modem and telephone line, or (2) radio communication providing access to the database to the subscribers</p> |
| TruePosition: | <p>Function: storing location data identifying the cellular telephones and their respective locations, and for providing access to said database to subscribers at remote locations</p> <p>Structure: The combination of the "database 20" and the "first terminal 22 coupled via a modem . . . and telephone line to the database 20" disclosed in col.9 ll.25-27, Fig. 2 Blocks 20, 22, or equivalents of such a combination;</p> <p>Or</p> <p>Structure: The combination of the "database 20" and the "second terminal 24 in radio communication with the database 20" disclosed in col.9 ll.27-29, Fig. 2, Blocks 20, 24, or equivalents of such a combination;</p> <p>Or</p> <p>Structure: The combination of the "database 20" and the "third, handheld terminal 26, which is carried by a user who also has a cellular telephone 10b, in radio communication with the database" disclosed in col. 9 ll.29-31, Fig. 2, Blocks 20, 26, or equivalents of such a combination</p> |

2. **Differences Between The Parties' Constructions**

Andrew and TruePosition agree the "database means" limitation is subject to ¶ 112(6). The parties' proposed functions are identical. However, the parties differ on the issue of structure:

- (a) TruePosition points to certain passages in the specification as disclosing a structure for the database means, but its structure does not correspond to the

portion of the function requiring “storing location data identifying the cellular telephones and their respective locations.”

- (b) Andrew, unable to find a structure in the specification corresponding to “storing location data identifying the cellular telephones and their respective locations,” proposed a general construction that includes incorporation of its construction for “identifying.”

3. The Claim Should Be Declared Invalid

First, as Andrew explains in detail in its concurrently-filed Motion for Summary Judgment of Invalidity of Claim 22 of the ‘144 Patent For Indefiniteness, Claim 22 is invalid. This is because the specification does not disclose a structure that corresponds to the portion of the function that requires “storing location data identifying the cellular telephones and their respective locations.” *See* Andrew’s Motion For Summary Judgment of Invalidity.

Because there is no structure disclosed in the specification, Andrew can think of no structure other than a “database or local disk storage device containing the unique code corresponding to each cellular telephone and a terminal coupled to the database....” But a “database” as the structure for a “database means” for “storing location data identifying the cellular telephones and their respective location,” is insufficient to save the validity of the claim. *See Default Proof Credit Card System, Inc.*, 412 F.3d at 1299-1303 (holding “means for dispensing” claim invalid where no structure disclosed except “dispenser”); *see also Finisar Corp. v. The DirecTV Group, Inc.*, 416 F. Supp. 2d 512, 519 (E.D. Tex. 2006) (finding “database editing means” claim was invalid where patent-at-issue contained only “the bare repetition of the function” and “describe[d] no algorithm, formula, or series of steps performed by the computer to accomplish the function of generating indices and embedding them”); *DE Techs, Inc. v. Dell, Inc.*, 428 F. Supp. 2d 512, 522 (W.D. Va. 2006) (means-plus-function claims indefinite where the patent did “not include sufficient structure for performing the function “running a single transaction program which utilizes and communicates with such additional programs, databases, and systems...”)).

VI. CONCLUSION

For all of these reasons, Andrew respectfully requests that the Court adopt its proposed claim constructions.

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CERTIFICATE OF SERVICE

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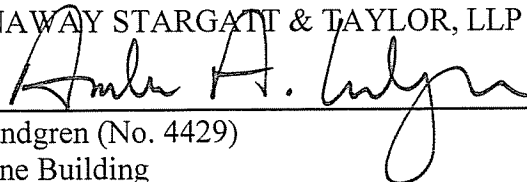
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